CITY OF BOZEMAN
WATER TREATMENT PLANT

Water Quality Report

January 1, 2013- December 31, 2013

City of Bozeman
Vision Statement:
Bozeman, Montana:
The Most Livable Place.

PURE AND FRESH

We are pleased to present our 2013 Water Quality Report, also known as the Consumer Confidence Report. We want to inform you about the drinking water we deliver to you every day.

Is Bozeman's water safe to drink?

Absolutely!

We are proud that Bozeman's drinking water meets, or exceeds, all federal and state requirements. The water system for the City of Bozeman had one violation in 2013 for turbidity. Our goal continues to be to provide you with a safe and dependable supply of drinking water.

All sources of drinking water are subject to potential contamination by constituents which occur naturally, or are manmade. These constituents can be microbes, organic and inorganic chemicals, or radioactive materials. In order to ensure safe drinking water, the Environmental Protection Agency established regulations limiting the amount of certain contaminants for public water systems.

This brochure contains a list of all *detected* contaminants found in Bozeman's drinking water.

The City of Bozeman's Source Water Delineation and Assessment Report is available for viewing at the Bozeman Public Library.

WATER SOURCES

HYALITE CREEK

Water from Hyalite Creek flows into the Middle Creek Reservoir (Hyalite Reservoir) where it is stored for current and future use. This is a surface water source.

SOURDOUGH CREEK

Creek water is drawn from the watershed in Sourdough Canyon. No storage reservoir exists here since the breaching of Mystic Lake Dam in 1985. This is also a surface water source.

Water from Hyalite Creek is diverted via an underground pipeline and is mixed with water from Sourdough Creek at the Water Treatment Plant located on Sourdough Canyon Road. In early 2014, a new membrane water filtration plant will go online and replace the current multimedia filtration plant.

LYMAN CREEK

Located in the southern foothills of the Bridger Mountain range, this source is a fully enclosed spring. It is classified as a groundwater source.

SOURCE WATER ASSESSMENT

Bozeman's watersheds are devoid of significant potential sources of contamination. The exception is the transportation corridor along Hyalite Creek, which has a very high susceptibility to contamination by transportation of chemicals, including vehicle fluids, on Hyalite Road.

WATER AND YOUR HEALTH

All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at (800) 426-4791.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons, such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly people, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers.

EPA/CDC guidelines on appropriate means to lessen the risk of infection by Crytosporidium and other microbial contaminants are available from the Environmental Protection Agency's Safe Drinking Water Hotline (800)426-4791.

Table on inside of brochure.

OTHER NOTES

Water is vital to our community, our way of life, our children's future, and the livelihood of generations to come.

The City of Bozeman encourages all citizens to become active in protecting our water sources. If you would like to participate in decisions which may affect the quality of life in Bozeman, please contact the Clerk of Commission at 582-2321 for information about City Commission meeting times and agendas.

If you are a landlord or property manager, please distribute this brochure to your tenants. Additional copies are available at City Hall, 121 North Rouse Avenue. This report can be found on the City of Bozeman website at www.bozeman.net/Departments-(1)/Public-Works/Water-Treatment/Water-Quality.

This brochure was prepared by the City of Bozeman Water Treatment Plant Division. If you have questions, please call the Water Treatment Plant Superintendent at 586-7158.

For more information contact:

City of Bozeman
Water Treatment Plant
Superintendent
586-7158

Listed in the table below are all the contaminants ***detected*** in Bozeman's drinking water after treatment during the 2013 calendar year. The Environmental Protection Agency (EPA) and the State of Montana Department of Environmental Quality (DEQ) require monitoring of over 80 contaminants. An additional table of information frequently used from the Water Treatment Plant is available online at www.bozeman.net/Departments-(1)/Public-Works/Water-Treatment/WaterQuality.

DEFINITIONS

Action Level (AL):	The concentration of a contaminant which, if exceeded, triggers treatment, or other requirements, which a water system must follow. Ninety percent of samples must be at, or below, this level. Lead and copper are measured at the 90th percentile.
Maximum Contaminant Level Goal (MCLG):	The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
Maximum Contaminant Level (MCL):	The highest level of a contaminant allowed in drinking water. MCLs are set as close to MCLGs as feasible, using the best available treatment technology.
Maximum Residual Disinfectant Level (MRDL):	The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants (4.0 mg/l)
Maximum Residual Disinfectant Level Goal (MRDLG):	The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contamination (4.0 mg/l)
Nephelometric Turbidity Units (NTU):	The level of turbidity in filtered water.
ppm:	parts per million
ppb:	parts per billion
pCi/L:	Picocuries per liter (a measure of radioactivity)
Treatment Technique (TT):	Required process intended to reduce the level of a contaminant in drinking water.
Running Annual Average (RAA):	Average of the results of the most recent four quarters.
Locational Running Annual Average(LRAA):	Average of the results for a location for the most recent four quarters.
UCMR3	Unregulated Contaminant Monitoring Rule #3. Sampled at each WTP entry point (EP) to the system and in the distribution system Max residence time (MRT) for each source.

TABLE OF DETECTED CONTAMINANTS

HYALITE/SOURDOUGH SOURCE:

Contaminant	Detected Level	Range	MCL or AL	MCLG	Typical Contaminant Source
Total Trihalomethanes	38.0 ppb (highest LRAA)	10.0-39.0 ppb (system wide)	80 ppb (LRAA)	N/A	By-product of drinking water chlorination
Haloacetic Acids	24.0 ppb (highest LRAA)	7.7-25.0 ppb (system wide)	60 ppb (LRAA)	N/A	By-product of drinking water cholorination
Lead*	3.0 ppb (90th percentile)	Zero sites exceeded A.L.	15 ppb (AL)	0 ppb	Erosion of natural deposits; corrosion of household plumbing systems
Copper	0.053 ppm (90th percentile)	Zero sites exceeded A.L.	1.3 ppm (AL)	1.3 ppm	Corrosion of household plumbing systems; erosion of natural deposits.
Flouride	1.07 ppm (average)	0.56 -1.32 ppm	4 ppm (MCL)	4 ppm	Erosion of natural deposits; water additive which promotes strong teeth
Turbidity**	3.18 NTU 97.3% < 0.3 NTU	0.02-3.18 NTU	TT = 1 NTU TT = 95% <0.3 NTU	N/A	natural result of soil runoff
UCMR3@EP			Total Cr		Chromium-6 is naturally occurring or from industrial activities; Strontium and Vanadium occur naturally in the environment.
Chromium-6	0.134ppb		MCL=100ppb		
Strontium	79.99 ppb				
Vanadium	0.366 ppb				
UCMR3@MRT			Total Cr		Chromium-6 is naturally occurring or from industrial activities; Strontium and Vanadium occur naturally in the environment.
Chromium-6	0.147ppb		MC=100ppb		
Strontium	82.93 ppb				
Vanadium	0.377ppb				

* Lead has not been detected in Bozeman's source water. This sampling was done in July of 2012 in accordance with EPA regulations. Lead and Copper are regulated over the entire distribution system (not by source), so these results were not repeated for the Lyman source. If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of Bozeman is responsible for providing high-quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline (1-800-426-4791) or at www.epa.gov/safewater/lead.

** Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. The City of Bozeman's filtered water must be less than, or equal to, 0.3 NTU in at least 95% of monthly measurements, and it can never exceed 1 NTU. The single highest measurement was 3.18 NTU. Bozeman's average daily turbidity was 0.05 NTU. A turbidity excursion happened in May, 2013 due to highly colloidal runoff water, which makes it very difficult to treat. This situation was remedied in less than 24 hours. As a Tier 1 violation (due to exceeding 1 NTU), the DEQ and consumers were notified with a Health Advisory. Bacteriological testing was conducted also and all samples came back negative.

LYMAN SOURCE:

Contaminant	Detected Level	Range	MCL or AL	MCLG	Typical Contaminant Source
Nitrate+Nitrite	0.16 ppm		Nitrate-10 ppm (MCL) Nitrite - 1 ppm (MCL)	10 ppm 1 ppm	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits
Total Trihalomethanes	2.4 ppb (RAA)	1.9-3.6 ppb	80 ppb (RAA)	N/A	By-product of drinking water chlorination
Haloacetic Acids	0.40 ppb (RAA)	0.0-1.6 ppb	60 ppb (RAA)	N/A	By-product of drinking water cholorination
Flouride	0.93 ppm (average)	0.23 -1.22 ppm	4 ppm (MCL)	4 ppm	Erosion of natural deposits; water additive which promotes strong teeth
Radium*** (Combined 226/228)	0.8 (+/-0.4)pCi/L		5 pCi/L (MCL)	0 pCi/L	Erosion of natural deposits
Gross Alpha***	2.0 (+/-1.4)pCi/L		15 pCi/L (MCL)	0 pCi/L	Erosion of natural deposits
UCMR3@EP			Total Cr		Chlorate results from disinfection with sodium hypochlorite; Chromium-6 is naturally occurring or from industrial activities; Strontium and Vanadium occur naturally in the environment.
Chlorate	110.77 ppb		MCL=100ppb		
Chromium-6	0.99 ppb				
Strontium	89.27 ppb				
Vanadium	0.358 ppb				
UCMR3@MRT			Total Cr		Chlorate results from disinfection with sodium hypochlorite; Chromium-6 is naturally occurring or from industrial activities; Strontium and Vanadium occur naturally in the environment.
Chlorate	93.133 ppb		MCL=100ppb		
Chromium-6	0.107 ppb				
Strontium	89.46 ppb				
Vanadium	0.362 ppb				

***last collected in 2010 per EPA regulations